



THIS WORKBOOK BELONGS TO:

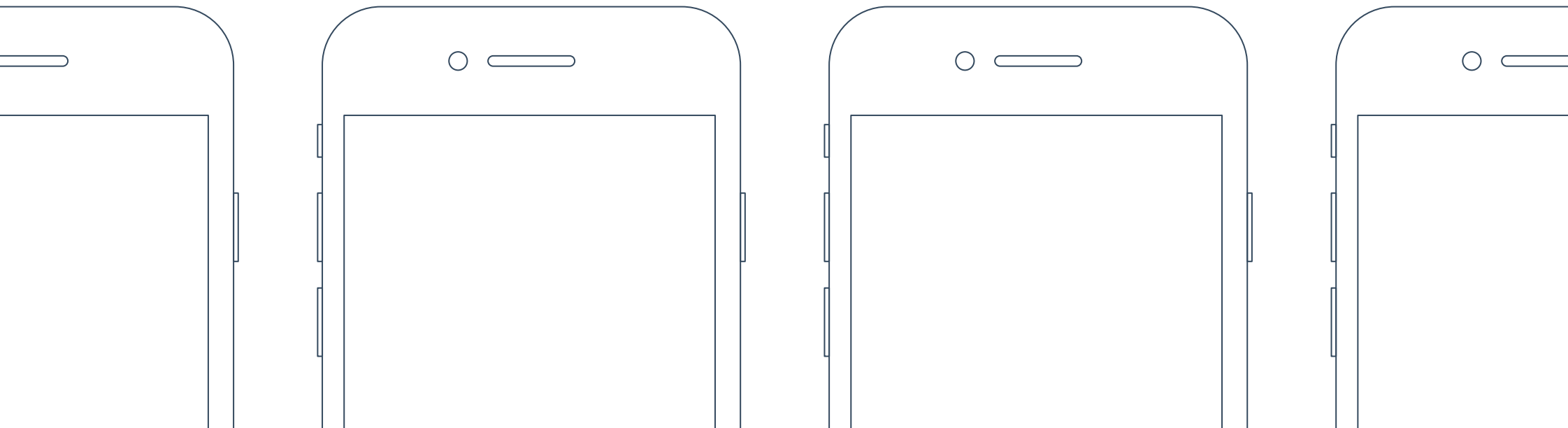
Student workbook

APP DESIGN - UNPLUGGED



Welcome

In this project, you and your team will work together to design an app that solves a problem you care about.



APP DESIGN - UNPLUGGED

COURSE WORKSHEETS

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ACTIVITY 1.2

SOLVING PROBLEMS WITH TECHNOLOGY

COURSE

APP DEVELOPMENT UNPLUGGED

What different careers are mentioned in the first video?

What key skills do you think are important for careers involving coding?

What technology have you and your family used during the pandemic? Would you use a contact tracing app?

Use this worksheet to make a note of your answers.

NAME



ACTIVITY 1.3

DECIDE WHAT MAKES A GOOD APP

COURSE

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Apps I like	Apps I don't like
What makes a good app?	
What makes a bad app?	

Think about the apps you use and the ones you've tried but didn't like. What do the good apps have in common? What do the bad apps have in common?

NAME



ACTIVITY 1.4

REVIEW EXISTING APPS

COURSE

APP DEVELOPMENT UNPLUGGED

Example - Shazam	Your App (name) -
<p>What it does</p> <p>Captures a sample of audio and identifies it by comparing with files in the app's database.</p> <p>Problem it solves</p> <p>People hear a song (e.g. in a film or TV programme) and don't know what it is or who it is by.</p> <p>Who the app is aimed at</p> <p>Young people of either gender who like music</p> <p>Phone features used</p> <p>Microphone Touch screen Connectivity / Cloud storage</p>	<p>What it does</p> <p>Problem it solves</p> <p>Who the app is aimed at</p> <p>Phone features used</p>

To help you understand what type of problems apps can solve think about an app you have used. Make a note of what the app does, the problem the app is solving, who it's for, and the phone features it uses.

NAME

ACTIVITY 2.1

AGREE TEAM VALUES

COURSE

APP DEVELOPMENT UNPLUGGED

<h3>User-centred</h3> <p>Having the needs of the person who will be using the product as the most important or focal element.</p>	<h3>Innovative</h3> <p>Featuring something new or advanced, through original and creative thinking.</p>	<h3>Curious</h3> <p>Eager to know or learn something. This could be about people, places, or things around you.</p>
<h3>Creative</h3> <p>Creating something through good imagination or original ideas, or through mixing existing ideas.</p>	<h3>Collaborative</h3> <p>Working well as a team, or with other teams, to successfully achieve something.</p>	<h3>Business-savvy</h3> <p>Shrewd and knowledgeable about business, and having common sense and good judgement.</p>
<h3>Ethical</h3> <p>Avoiding activities or organisations that do harm to people or the environment.</p>	<h3>Passionate</h3> <p>Caring deeply about something. This could be about an idea or the thing you are creating.</p>	<h3>Hard-working</h3> <p>Working with energy, being committed, and doing your best to achieve something.</p>

Which of these team values are most important to your team? Discuss with the rest of the team and tick the five which best represent your values.

NAME

ACTIVITY 2.2

UNDERSTAND TEAM DEVELOPMENT

COURSE

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What ideas do you have to help your team during the following stages of team development?

Forming

Storming

Norming

Performing

Discuss with your team how best to work through these stages of team development.

NAME

ACTIVITY 2.3

SUPPORT TEAM BUILDING

COURSE

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Stagehog

They want all of the attention from the group. They believe their ideas are the best and should be used by the others. They do not want to listen to other people.



Clown

They are always trying to get the group to talk about anything besides the activity they are supposed to be working on. They joke around too much.



Moaner

They are always predicting failure for the group. They think the activity is stupid and they keep complaining about having to do it.



Isolate

They do not participate in the group. They do not offer any opinions when asked. They act indifferent.



Why do you think someone might behave like a stagehog, clown, moaner or isolate and how would you help them to work more effectively with the rest of the team?

NAME

ACTIVITY 2.3

SUPPORT TEAM BUILDING

COURSE

APP DEVELOPMENT UNPLUGGED

What makes an effective team?

What makes a good team member?

Stagehog

Clown

Moaner

Isolate

Use this worksheet to document what you think makes an effective team and a good team member. Why do you think someone might behave like a stagehog, clown, moaner or isolate and how would you help them to work more effectively with the rest of the team?

NAME

ACTIVITY 2.4

SIGN THE CO-FOUNDER AGREEMENT

COURSE

APP DEVELOPMENT UNPLUGGED

Discuss these questions and tick as appropriate			Signatures and share ownership	
How will decisions get made?	<input type="checkbox"/> MAJORITY	<input type="checkbox"/> PLURALITY	SIGNED	%
How will share ownership be split?	<input type="checkbox"/> EQUALLY	<input type="checkbox"/> OTHER	SIGNED	%
What happens if a team member leaves?	<input type="checkbox"/> LOSES SHARES	<input type="checkbox"/> KEEPS SHARES	SIGNED	%
Tick five that are most important to the team			SIGNED	%
<input type="checkbox"/> USER-CENTRED	<input type="checkbox"/> INNOVATIVE	<input type="checkbox"/> CURIOUS	SIGNED	%
<input type="checkbox"/> CREATIVE	<input type="checkbox"/> COLLABORATIVE	<input type="checkbox"/> BUSINESS-SAVVY	SIGNED	%
<input type="checkbox"/> ETHICAL	<input type="checkbox"/> PASSIONATE	<input type="checkbox"/> HARD-WORKING	DATE	

It's important that all team members agree some things from the start. Decide how decisions will get made. 'Majority' means that a decision requires support from more than 50% of team. 'Plurality' means the largest number of voters.

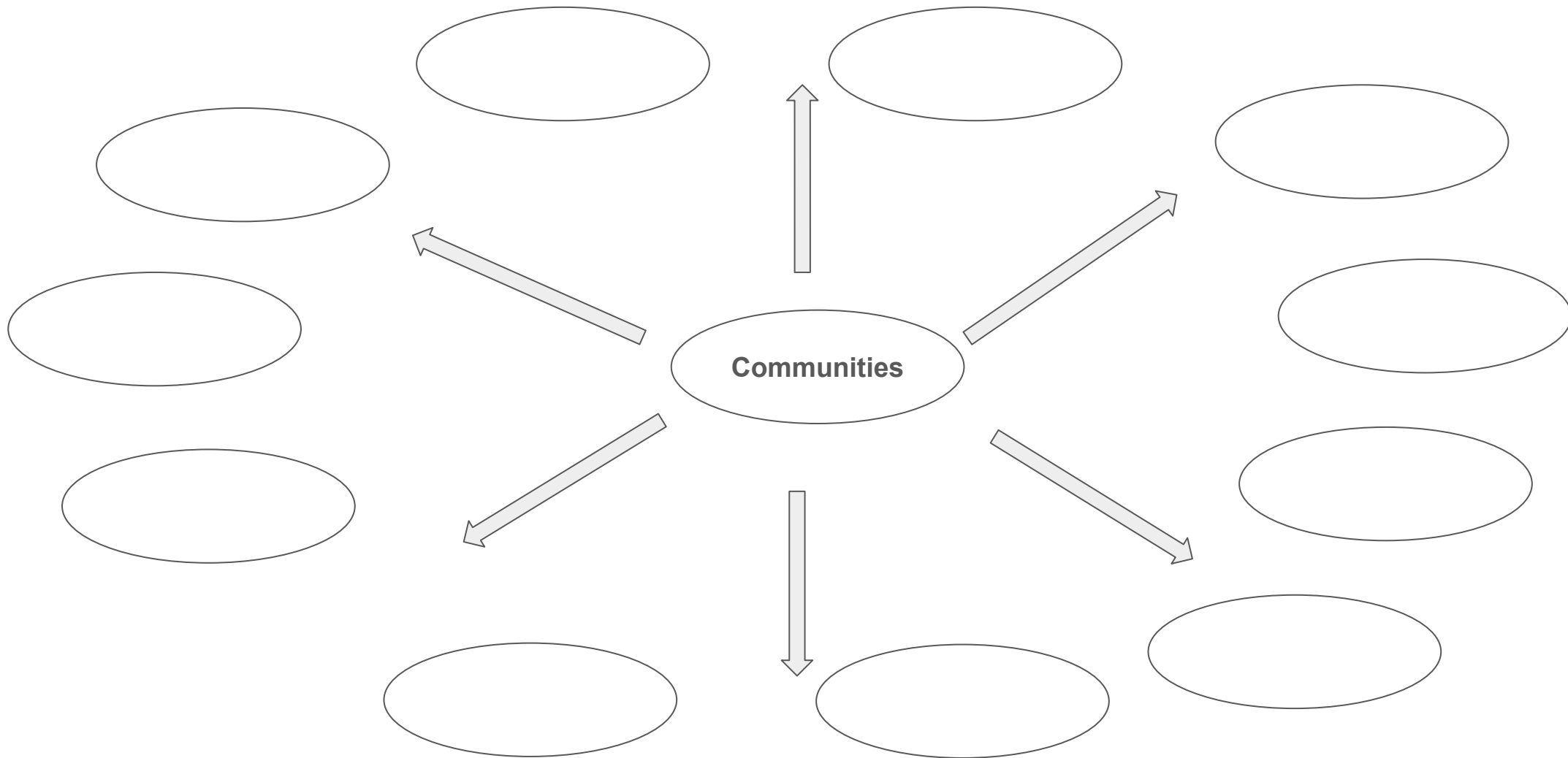
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ACTIVITY 3.1

IDENTIFY YOUR COMMUNITIES

COURSE

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Use this page to draw out your mindmap of the communities you belong to

NAME

ACTIVITY 3.2 & 3.3
SPOT POSSIBLE PROBLEMS

COURSE
APP DEVELOPMENT UNPLUGGED

Record your initial ideas here

Think through your average day - what problems or frustrations do you come across?

Use this sheet to jot down your ideas

NAME



ACTIVITY 3.4**CHANGE THE WORLD****COURSE****APP DEVELOPMENT UNPLUGGED**

Things that I would like to be different in my local community or my life	Things that I wish more people knew about or understood better
Someone or something I worry about	One way I would most like to change the world

Use this sheet to jot down your ideas before discussing them with the rest of your team.

NAME

ACTIVITY 4.1

FILTER THROUGH PROBLEMS

COURSE

APP DEVELOPMENT UNPLUGGED

Mass market ideas

Lots of people affected

Game-changing ideas

Low impact on people's lives

High impact on people's lives

Low appeal ideas

Few people affected

Targeted ideas

If you're going to invest time in designing an app, you need to be sure your problem is worth solving. For the problems you've identified, consider how many people it impacts, and level of impact, then plot each problem in the 2x2 grid. Problems bottom left are unlikely to be successful.

NAME



ACTIVITY 4.2

BRAINSTORM SOLUTIONS

COURSE

APP DEVELOPMENT UNPLUGGED

What is causing the problem?

What ideas does this generate to solve the problem?

Use this sheet to jot down your ideas

NAME



ACTIVITY 4.3
CHOICE ARCHITECTURE

COURSE
APP DEVELOPMENT UNPLUGGED

What behaviour would help solve this problem?

How can you encourage people to choose this behaviour?

Use this sheet to jot down your ideas

NAME



ACTIVITY 4.4

DRAFT MINI ELEVATOR PITCH

COURSE

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Pitch idea	
My app is called...	
I am creating an app aimed at...	<i>(the sort of person who would use the app)</i>
to help them to...	<i>(the problem / challenge)</i>
by providing them with...	<i>(how the app could help solve the problem)</i>

Turn problems into product ideas with a mini 'elevator pitch'. As an example. "My app is called Zen Studio. I am creating an app aimed at students to help them to wake up earlier by providing them with incentives to get up."

NAME



ACTIVITY 5.1

PRESENT ELEVATOR PITCH

COURSE

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Questions for industry expert / other teams

Feedback from Expert

Next steps

Talking with an industry Expert can give you a chance to ‘reality check’ your app idea and make sure you’ve thought of everything you need to make sure your project is a success. Use this page to prepare for your Industry Engagement session and record the feedback they give you.

NAME



ACTIVITY 6.2

LIST USER NEEDS AND FEATURES

COURSE

APP DEVELOPMENT UNPLUGGED

User need	User need	User need
Feature ideas	Feature ideas	Feature ideas
User need	User need	User need
Feature ideas	Feature ideas	Feature ideas

Explore your user's needs in more detail. Try to come up with ideas for feature that could meet those needs.

NAME

ACTIVITY 6.3

DEVELOP AN MVP

COURSE

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App name	Rank its importance	Data required and source?	Include in MVP?
Feature			

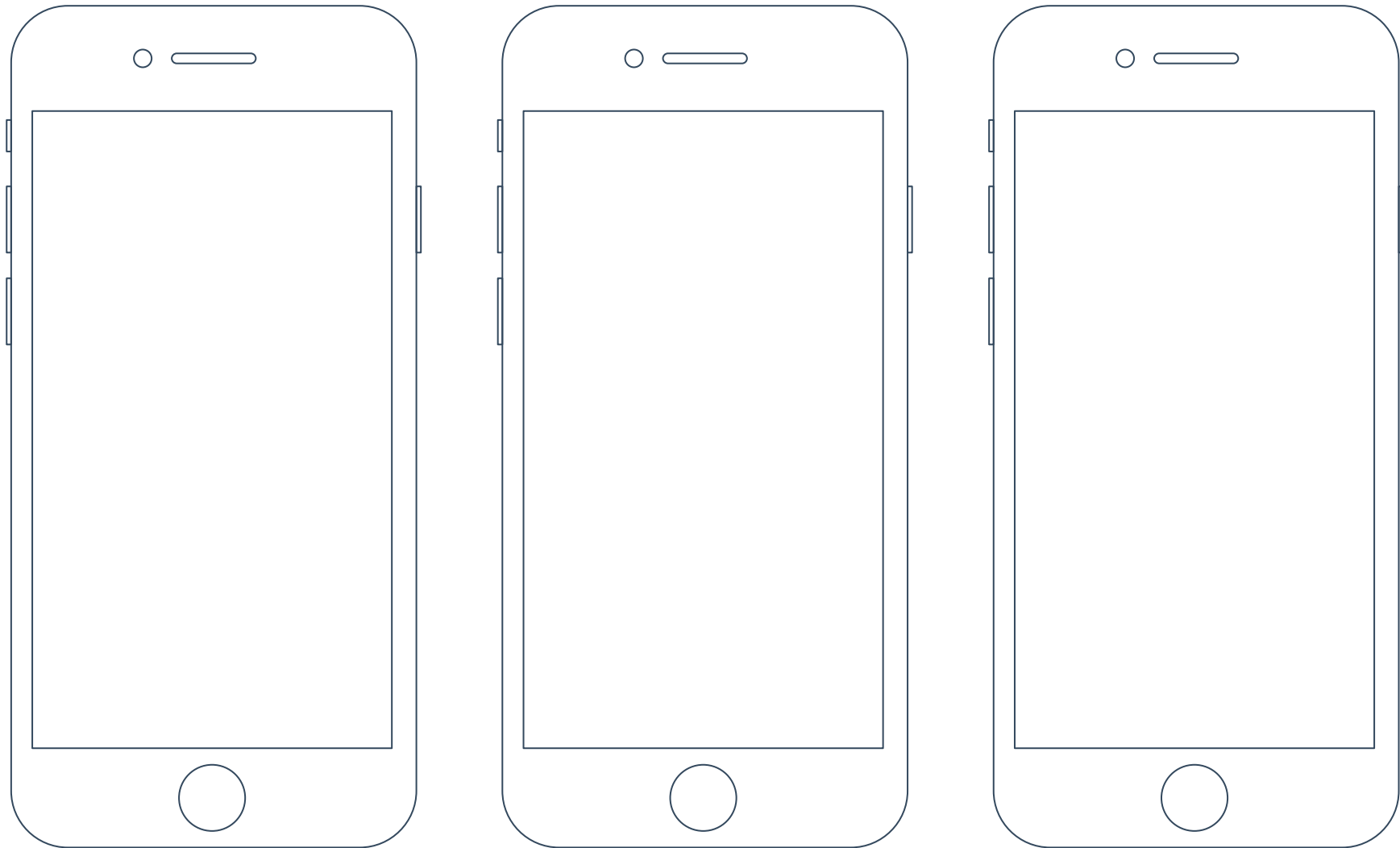
Use this worksheet to review the potential features of your app and decide whether to include them in your MVP

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ACTIVITY 6.4
PAPER DESIGNS

COURSE
APP DEVELOPMENT UNPLUGGED



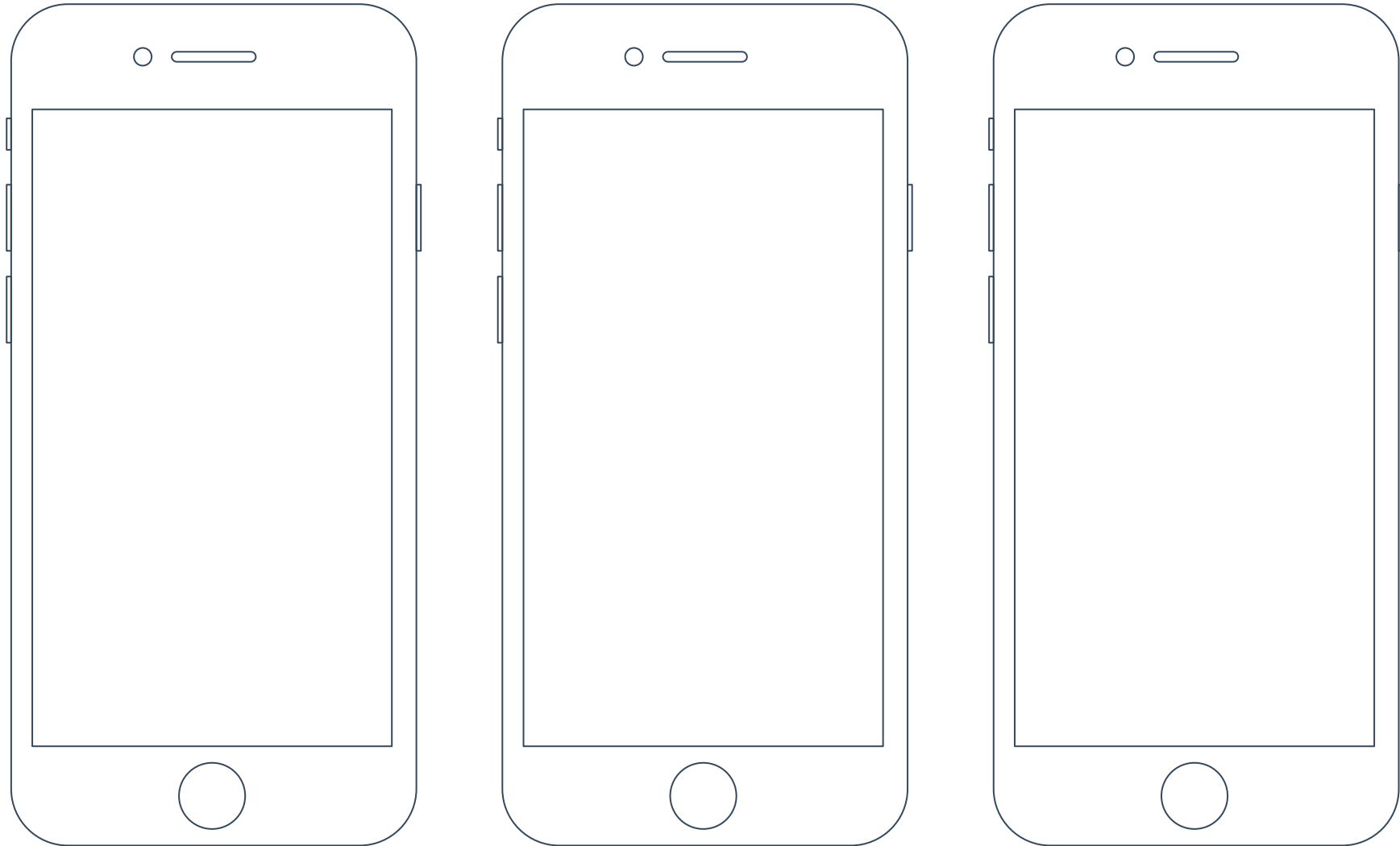
Thinking about essential and feasible features, sketch out how you want your screens to look. Consider what the user sees when they open the app, and how they move through screens and use important features.

NAME



ACTIVITY 6.4
PAPER DESIGNS

COURSE
APP DEVELOPMENT UNPLUGGED



Thinking about essential and feasible features, sketch out how you want your screens to look. Consider what the user sees when they open the app, and how they move through screens and use important features.

NAME



ACTIVITY 8.1/8.2

FLOWCHARTS AND PSEUDOCODE

COURSE

APP DEVELOPMENT UNPLUGGED

What was the problem with Sheldon's flowchart?

How was this problem solved?

Why are flowcharts useful?

Why is pseudocode useful?

NAME

ACTIVITY 8.3

DRAW FLOWCHARTS AND PSEUDOCODE

COURSE

APP DEVELOPMENT UNPLUGGED

Draft flowchart/pseudocode

Use this worksheet to draft your flowcharts or pseudocode.

NAME

ACTIVITY 8.3

DRAW FLOWCHARTS AND PSEUDOCODE

COURSE

APP DEVELOPMENT UNPLUGGED

Draft flowchart/pseudocode

Use this worksheet to draft your flowcharts or pseudocode.

NAME

ACTIVITY 9.1**DEVELOP A BUSINESS MODEL****COURSE****APP DEVELOPMENT UNPLUGGED**

Free with adverts	In-app purchases
What might your user be interested in buying?	What in-app purchases could you offer?
Freemium	Paid for app
What free features could work as a standalone app?	What in your app is worth paying for?
Chosen business model(s)	

Think about how you will make money from your app. Identify which business models are feasible for your product. Consider all the options and remember, you could have a mix of revenue streams.

NAME

ACTIVITY 9.3

REFLECT ON YOUR PROJECT

COURSE

APP DEVELOPMENT UNPLUGGED

What has gone well with your app development?	What could have gone better with your app development?
What has been good about how you have organised your time and planned your project? (include working in a team if applicable)	What would you do different if you were to complete a similar project? (Include working in a team if applicable)

Reviewing a project helps you identify what went well, and what not so well, so that you can improve how you work in your next project. It's something all tech development teams do. Review your progress against the success criteria you drew up at the start of the project.

NAME

Ace, course complete!

Making great apps requires hard work and constant improvement. App development is a journey. Where will your journey end?

To develop your app idea further check out these great tools:

- <https://marvelapp.com/>
- <http://appinventor.mit.edu/explore/front.html>
- <https://code.org/educate/applab>



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